



A U.S. Department of Defense Information Analysis Center (IAC) sponsored by the Defense Technical Information Center (DTIC)

THE 1998 MEDICAL DEFENSE BIOSCIENCE REVIEW

By Cindy Kronman, U.S. Army Medical Research Institute of Chemical Defense

“Minimizing Chemical Warfare Threats Through Development of Advanced Medical Countermeasures” was the theme for the very successful 1998 Medical Defense Bioscience Review, held 31 May to 4 June, at the Marriott’s Hunt Valley Inn in Hunt Valley, Maryland. Hosted by the U.S. Army Medical Research Institute of Chemical Defense (USAMRICD), Aberdeen Proving Ground, Maryland, the review brought together over 300 distinguished scientists involved in the medical chemical and biological defense research programs.

In opening the meeting, MG John S. Parker, Commander, U.S. Army Medical Research and Materiel Command, emphasized the importance of medical chemical and biological defense research in an era in which the threat is global and all people need protection, not just the warfighters. He went on to describe the conference as “the center of activity for the exchange of science and development in these areas.”

“This meeting is growing and maturing and becoming very, very important to this

world,” MG Parker told attendees.

At the conclusion of his remarks, he introduced BG (now MG) John Doesburg, then Joint Program Manager of the Joint Program Office for Biological Defense and now Commander of the U.S. Army Soldier and Biological Chemical Command (SBC-COM), who gave the keynote address, “Chemical/Biological Defense and Force Protection.” Doesburg talked about the duties of his current position, his responsibilities as the new Commander of SBC-COM, the interrelationship between medical systems and...nonmedical systems.”

“There’s not a separate medical and a separate nonmedical solution to the problem of protecting our force and now protecting our nation,” concluded Doesburg. “In fact the true solution is the marriage of both of those.”

The meeting continued with the session “Nerve Agents: Scavengers and Biotechnology,” in which the latest efforts to develop enzyme scavengers to protect against the effects of nerve CW agents

were discussed. The current research on nerve agent-induced seizures and the development of an advanced anticonvulsant, a special Neuroprotection Workshop, and a discussion of the current training and preparedness programs addressing chemical terrorism took the stage on day two of the conference. Day three concentrated on vesicating agents, specifically sulfur mustard. Attendees debated the proposed mechanisms of injury of these agents as well as the methods being devised to intervene in this injury. Afternoon sessions were devoted to the advanced development of materiel for chemical casualty care and to the development of topical skin protectants and reactive topical skin protectants. Research on toxins, especially botulinum toxin, was the

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COL James Romano presents BG (now MG) John Doesburg with a plaque in appreciation for his keynote address at the 1998 Medical Defense Bioscience Review.

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THE DEFENSE THREAT REDUCTION AGENCY ESTABLISHED

The newest defense agency, the Defense Threat Reduction Agency (DTRA), was established October 1, 1998 by Secretary of Defense William S. Cohen, in a ceremony near Dulles International Airport. DTRA's mission is to reduce the threat to the United States and its allies from nuclear, biological, chemical (NBC), conventional and special weapons.

As a result of the November 1997 Defense Reform Initiative (DRI), part of the Clinton administration's efforts to improve government efficiency, several organizations were merged to create the new agency. Thus, a majority of DTRA's employees have come from elements of the Office of the Secretary of Defense staff, the Defense Technology Security Administration, the Defense Special Weapons Agency, and the Onsite Inspection Agency, which were merged to create DTRA. The director of the new agency is Dr. Jay Davis.

DTRA accomplishes its mission through the execution of technology security activities; cooperative threat reduction (CTR) programs; arms control treaty monitoring and onsite inspection; force protection; NBC defense and counterproliferation (CP). Another aspect of DTRA's mission is to support the U.S. nuclear deterrent and provide technical support on WMD matters to DoD components. Its projected FY99 budget is approximately \$1.9 billion.

For details about DTRA, its mission and organization, visit its website at <http://www.dtra.mil>.



Office of the Assistant Secretary of Defense
(Public Affairs)
Washington, D.C. 20301
News Release No. 508-98
October 1, 1998
http://www.defenselink.mil/news/Oct1998/b1001198_bt508-98.html

ARMY COMMANDS MERGE TO CREATE SOLDIER AND BIOLOGICAL CHEMICAL COMMAND

On October 1, 1998, the Army merged two premier commands to combine soldier, chemical and biological expertise in an effort to better protect our military and civilian communities. The new command, known as the U.S. Army Soldier and Biological Chemical Command (SBCCOM), combines the former U.S. Army Chemical and Biological Defense Command (CBDCOM) at the Edgewood Area of Aberdeen Proving Ground, Maryland; and the U.S. Army Soldier Systems Command (SSCOM) located in Natick, Massachusetts. SBCCOM is responsible for the research, development and implementation of chemical, biological and soldier missions.

The mission of SBCCOM is to develop and implement soldier, chemical and biological defense systems to ensure the decisive edge and maximum protection for the United States; and provide for the safe storage and treaty compliance of the U.S. chemical weapons stockpile. By fostering partnerships, SBCCOM will achieve the best joint capability for military and civilian protection.

For further information, contact the U.S. Army Soldier and Biological Chemical Command Public Affairs Office at (410) 436-4345, or visit the SBCCOM website at <http://www.sbccom.army.mil/>.



SBCCOM Press Release
Date: October 1, 1998
http://www.apgea.army.mil/PressReleases/pr_100198.htm

CONTRACT AWARDS

1. M21 Remote Sensing Chemical Agent Alarm (RSCAAL)

Intellitec
Division of Technical Products Group
2000 Brunswick Lane
Deland, FL 32724
Sole Source. July 8, 1998
By MCLB - Albany, GA

2. Combinatorial Strategies and Hypothesis-Based Drug Design in Drug Discovery Targeted to the Protease and Channel Activities of Botulinum Toxin A

University of California at San Diego
Contract and Grant Office
La Jolla, CA 92093-0934
\$726,026. July 1, 1998
By U.S. Army Medical Research Acquisition Activity

3. Respirator Filter

Am-Mac Inc.
38 Fairfield Point
West Caldwell, New Jersey 07006
\$41,714. July 7, 1998
By Defense General Supply Center-Richmond

4. Respirator Filters

SigmaTech Enterprises
90 Glenn Way, Suite 16
San Carlos, CA 94070
\$38,865. July 15, 1998
By Defense General Supply Center-Richmond

5. Oxygen Mask

Gentex Corporation
11525 6th Street
Rancho Cucamonga, CA 91730-6026
\$33,530. July 15, 1998
By Defense General Supply Center-Columbus

6. Supplied-Air Protective Lens Cartridge Mine Safety Appliances

PO Box 428
Pittsburgh, PA 15230
\$46,062. July 17, 1998
By Defense General Supply Center-Richmond

7. Assembled Chemical Weapons Assessment (ACWA) Program

Arthur D. Little
Sole Source
By AMC/AC-APG

8. Self-Contained Toxic Environmental Protective Outfit

Geomet Technologies
Germantown, MD
\$27,500,000 plus \$9,500,000 in optional orders.
July 20, 1998
By U.S. Army Soldier Systems Command

9. Large Face Piece Mask

Mine Safety Appliances
PO Box 428
Pittsburgh, PA 15230
\$227,357. July 21, 1998
By WR-ALC, GA

10. Monitoring the Comprehensive Test Ban Treaty

Southern Methodist University
P.O. Box 750302
Dallas, TX 75275-0302
\$982,437. July 16, 1998
By DSWA

11. Dismantlement of Biological Equipment Infrastructure at JSC Biomedpreparat, BW Production Facility Stepnogorsk

JSC Biomedpreparat
Republic of Kazakhstan
Sole Source
By DSWA

12. Support of the Cooperative Threat Reduction (CTR) Logistics Program

Raytheon Technical Services Co.
Vienna, VA
\$81,035,134 (if all options exercised). July 16, 1998
By DSWA

13. Demonstration Testing of Alternative Technologies for Demilitarization of Assembled Chemical Weapons

General Atomics
San Diego, CA
\$2,955,000.
By U.S. Army Chemical & Biological Defense Command

14. Demonstration Testing of Alternative Technologies for Demilitarization of Assembled Chemical Weapons

Burns & Roe Enterprises Inc,
Oradell, NJ
\$4,220,980.
By U.S. Army Chemical & Biological Defense Command

15. Demonstration Testing of Alternative Technologies for Demilitarization of Assembled Chemical Weapons

Parsons Technology Group
Pasadena, CA
\$5,192,765
By U.S. Army Chemical & Biological Defense Command

16. Detection of Chemical and Biological Agents Using Optical Waveguide Technology and Thin Film Sensors

Echo Technologies
5250 Cherokee Avenue
Alexandria, VA 22312
\$542,940. September 25, 1998
By U.S. Army Research Laboratory

17. Stabilized Crystalline Organophosphorus Hydrolase for Use as Additive in Topical Skin Protectant

Altus Biologics Inc
40 Allston Street
Cambridge, MA 02139-4211
\$182,185. September 16, 1998
By USAMRAA

18. M18A2 Detector Kits

Truetech, Inc.
680 Elton Avenue
Riverhead, NY 11901-2555
\$103,317. September 15, 1998
By U.S. Army Armament and Chemical Acquisition and Logistics Activity

19. M256A1 Chemical Agent Detector Kit (Exercise of Evaluated Option)

Truetech, Inc.
680 Elton Avenue
Riverhead, NY 11901-2555
\$603,451. September 10, 1998
By U.S. Army Armament and Chemical Acquisition and Logistics Activity

20. Drift Tube Module

Environmental Technologies Group, Inc.
1400 Taylor Avenue
P.O. Box 9840
Baltimore, MD 21284-9840
\$650,500. August 31, 1998
By U.S. Army Armament and Chemical Acquisition and Logistics Activity

23. Protective Collective Equipment

Hunter Mfg. Company
30525 Aurora Road
Solon, OH 44139-2795
August 31, 1998
By U.S. Army Armament and Chemical Acquisition and Logistics Activity

24. Collective Protection Equipment, M28 HUB

Intellitec, Inc.
2000 Brunswick Lane
DeLand, FL 32724
\$263,550. August 28, 1998
By U.S. Army Armament and Chemical Acquisition and Logistics Activity

25. Chemical Detector Kit

Bachrach, Inc.
625 Alpha Drive
Allegheny County
Pittsburgh, PA 15238
\$97,554. August 19, 1998
By Defense General Supply Center - Richmond

26. M20 Protective Entrance

Hunter Mfg. Company
30525 Aurora Road
Solon, OH 44139-2795
\$216,315. July 31, 1998
By U.S. Army Armament and Chemical Acquisition and Logistics Activity

CB NEWS EXCERPTS

The CBIAC has compiled a list of related CB news articles and taken excerpts from them to create brief overviews. The CBIAC does not provide secondary distribution of articles, but we can provide directions on where to find an article of interest. For further information, contact Mary Frances Tracy (tracymf@battelle.org) at (410) 612-6417.

Garamone, Jim. *Total-Force Anthrax Shots Start, American Forces Press Service*, 17 August 1998. On August 14th, DoD officials announced that service members deployed to Southwest Asia and Korea would start receiving anthrax vaccinations during August. Additionally, service personnel already stationed in Korea will begin receiving the vaccinations in September. DoD has initiated this three-phase vaccination program for all 2.4 million active duty and reserve component service personnel. Through an accelerated immunization program, approximately 48,000 service personnel in Southwest Asia have already received the shots. The three-phase vaccination program is as follows: Phase 1: Over the next 2 fiscal years, an estimated 200,000 service personnel going to high-threat areas, such as Korea and Southwest Asia, will receive the vaccinations; Phase 2: Beginning in fiscal 2000 and continuing through 2003, service personnel in early deploying units to high-threat areas will receive the vaccinations. This will involve approximately 300,000 personnel per year; Phase 3: Beginning in fiscal 2003, the remainder of the force and recruits will receive the vaccinations. Dr. Sue Bailey, assistant secretary of defense for health affairs, said the anthrax vaccine is safe, licensed by the Food and Drug Administration, it has been in use since 1971, and is effective against all known strains of anthrax. Service personnel must receive 6 shots over an 18-month period followed by an annual booster for total immunity. Tests have shown that some degree of protection is available following just 2 inoculations. In the 133,870 shots administered, seven adverse reactions have been reported which may be related to the shots. Six of the cases were minor in nature. The seventh case involves a service member who shortly after receiving the third in the series of inoculations contracted Guillain-Barre Syndrome. The anthrax

vaccinations are mandatory and Dr. Bailey also reported that DoD is looking at vaccinations against other possible biological agents.

Arostegui, Martin. *Fidel Castro's Deadly Secret. Insight*. 20 July 1998. This article profiles Fidel Castro's, the Cuban dictator, direction in the chemical and biological arena. According to documents smuggled out of Cuba, five chemical and biological weapons plants operate throughout the island of Cuba. Although these source documents were smuggled out, the credibility of the information reported has been enhanced by a recent classified Pentagon analysis. Additionally, the facilities housing these operations have not been on the itinerary of visiting dignitaries. Further reports smuggled out of Cuba have prompted Defense Secretary William Cohen to revise a Pentagon report sent to Congress last April decertifying Cuba as a threat to U.S. national security. The article continues with locations of chemical weapons plants in Cuba and defining some of the administration of the chemical and biological weapons production process.

Leader in Biological Defense Named V.P. at Southern Research.

<http://seek-p.infoseek.com/Content...k=noframes&col=NX&kt=A&ak=news1486>

6 Aug 1998. Recently retired U.S. Army Col. David R. Franz, DVM, Ph.D. joined Southern Research Institute to lead its new Chemical and Biological Defense Division (CBD). Dr. Franz will direct the CBD from the Frederick, Maryland facility. The Institute's Frederick facility will begin work as a subcontractor on the U.S. Army's Joint Vaccine Acquisition Program (JVAP). The JVAP will be responsible for the production, stockpiling, and the acquisition of the Food and Drug Administration's approval and licensure for vaccines to protect against biological agents.

Venter, Al. *The invisible threat: what does Russia have up its biological warfare sleeve? Jane's International Defense Review*. September 1998. The former first deputy director of Biopreparat, the civilian side of the Soviet Union's and subsequently Russia's biological warfare (BW) program, Dr. Kenneth Alibek, has informed the U.S. Joint Economic Committee concerning the extent of the BW program in Russia. Prior to his defection in 1992, Dr. Alibek, formerly Dr. Kanatjan Alibekov, was responsible for 32,000

employees and 40 research and production facilities where all work concentrated on germ warfare or related projects. In a paper entitled "Terrorism and Intelligence Operations", Dr. Alibek delineated some of the projects his staff worked on which were designed to destroy livestock or corps. He goes further by stating that new types of weapons could be produced that would damage military equipment through degradation of plastics, corrosion, and leaving fuel useless. During his testimony, Dr. Alibek claimed that prior to 1992, hundreds of tons of weaponized anthrax formulation had been stockpiled along with tons of plague and smallpox. The U.S. is extremely interested in the whereabouts of these pathogens since the shelf-life on some of these is indefinite. Based on the defection of Dr. Alibek and others, the U.S. intelligence community is concerned that Russia is still involved in offensive germ warfare research and development. Dr. Alibek claims that Russia is conducting BW research/genetic engineering on the smallpox virus with the eventual aim of manipulating the smallpox virulence factors and inserting genes of another virus into smallpox. This would create a new series of "chimera" viruses that would evade current vaccines or treatments. Additionally, the Marburg virus, labeled Variant U, has been mass-produced, dried, and processed into a dust inhalant that can be dispersed into the atmosphere in the form of an aerosol. This microencapsulation process allows the aerosolized viruses to remain potent until delivery to target. Dr. Alibek continued that work has been conducted against humans with Ebola, Japanese encephalitis, the Junin virus, Lassa fever, and the Muchupo virus (Bolivian haemorrhagic fever). In closing his presentation, Dr. Alibek remarked that with the potential scale down of the Russian BW program, many former Soviet Union scientist are now unemployed. He indicated this could create an unhealthy and unbalanced scenario in which renegade scientists would make their way to countries that are regarded hostile by the U.S.

See "CB News
Excerpts"

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page 10



NEW ACQUISITIONS

The following acquisitions may be reviewed at the CBIAC. Further information on how to obtain or review any of the listed acquisitions is included for your convenience. If you would like further detail, please contact Richard M. Gilman (gilman@battelle.org) at 410-612-6415. The CBIAC is not authorized to distribute duplicates of the listed acquisitions.



Arkin, William M. **The U.S. Military Online: A Directory for Internet Access to the Department of Defense.** 2nd edition. Washington, D.C.: Brassey's, 1998, pp. 242.

This work contains over 2000 internet addresses for official military web sites. Entries are arranged by subject matter, branch of service, geographical location and other relevant categories. Chapter titles include: "Think Tanks, Schools, Libraries, and History Collection," "Defense Policies, Weapons, and Systems," "Defense Department, Joint Chiefs of Staff, and Unified Commands," "Major Military Bases in the United States, by State," and "Major Military Bases and Commands Overseas."

Also includes a guide to military acronyms and a subject index.

CB-105862.01
ISBN 1-57488-178-7
(Softcover edition)
Brassey's, Inc.
P.O. Box 960
Herndon, Virginia 20172
(800)-776-2518

Eldridge, John ed. **Jane's NBC Defence Systems.** 11th ed. 1998-1999. Coudsdon, Surrey: Jane's Information Group Ltd., 1998, pp. 331.

"Jane's NBC Defence Systems is designed to offer the decision maker up-to-date background on the challenges for NBC defence, a country by country analysis of the world NBC scene and a comprehensive catalogue of NBC defence equipment."

Formerly titled "Jane's NBC Protection Equipment," this yearbook has undergone a number of changes. The title change

reflects a conscious effort to, "widen the coverage of the book to include all aspects of the NBC defense environment." The sections on weapons and their effects have been, "re-written from a defender's point of view with the intention of offering more guide on how to deal with each environment when designing defensive measures." Other changes include the expansion and renaming of the "Choice of Materials" section to emphasize recent technological developments and, in the main portion of the yearbook, "Equipment details have been recategorised to reflect the way NBC is generally viewed by defence planners and procurement authorities."

The yearbook includes contractor, manufacturer and subject matter indices and a glossary of NBC abbreviations and acronyms.

CB-105490.01
D756161
ISBN 0-7106-1804-2
(Hardcover edition)
Jane's Information Group, Inc.
1340 Braddock Place, Suite 300
Alexandria, VA 22314-1651
(703) 683-3700
(800) 824-0768

Mauroni, Albert J. **Chemical-Biological Defense: U.S. Military Policies and Decisions in the Gulf War.** Westport, CT: Praeger, 1998, pp. 236.

The author, a management consult specializing in DOD chemical-biological defense programs, chronicles and analyzes the U.S. military's response to the perceived Iraqi chemical/biological weapons threat during the Gulf War. He also identifies a number of key chemical-biological defense lessons learned from this conflict. Appendices provide lists of U.S. chemical defense units that served in Southwest Asia during the Gulf War; a chronology of events experienced by the XVIII ABN Corps G-3-NBC during the war and its aftermath and a glossary of NBC terms.

CB-105861.01
ISBN 0-275-96243-1
(Hardcover edition)
Praeger Publishers
88 Post Road West
Westport, CT 06881
(203) 226-3571

"The 1998 Medical Defense Bioscience Review"

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topic on 4 June, and the conference ended that afternoon with a session on low dose and chronic exposure of agents.

Dr. William Haseltine provided the keynote address at the Review's banquet, held Wednesday evening, 3 June. Dr. Haseltine discussed the research efforts of his company, Human Genome Science Inc, to isolate specific genes for use in fighting a variety of diseases. Guests at the banquet were entertained by the United States Army Chorus.

The USAMRICD's bioscience reviews have traditionally been an excellent avenue for advancing knowledge in the area of medical chemical and biological defense and for communicating that knowledge among the participants of the Medical Chemical and Biological Defense Research Program. Not only does the conference challenge attendees to explore and develop better countermeasures, but, according to COL James Romano, Deputy Commander, USAMRICD, because attendees come from academia, industry, and allied countries as well as government laboratories, the meeting has other important benefits.

"Bioscience provides a venue in which our program receives a peer review from academia and industry and from which we can solicit comments on our progress and focus. The meeting also enables the medical community to reach diverse DoD communities with an interest in the chemical/biological arena," said COL Romano. "Today the community of interest in the chemical/biological arena is broadened by the threat of terrorism. This enhanced interest must be captured and reflected back into our programs to strengthen them."

COL James Little, Commander, USAMRICD concluded the meeting by stating that his goals of having a good exchange of scientific information, of renewing old acquaintances, and of having an enjoyable time were met. He thanked the participants for working together to develop medical countermeasures to chemical warfare agents, encouraging them to continue in this very worthwhile endeavor.

For further information about USAMRICD, or Medical Defense Bioscience Reviews, contact Lloyd Roberts at (410) 436-3948 or by E-mail roberts@asia.apgea.army.mil.

CALENDAR OF EVENTS

The CBIAC maintains a Calendar of Events highlighting conferences, symposia, meetings, exhibitions and workshops of interest to the CB community in every issue of our newsletter and on the CBIAC homepage at <<http://www.cbiac.apgea.army.mil>>. We invite CBIAC users to submit information on various events to Judith A. Hermann (hermannj@battelle.org) at 410-612-6421. Due to space limitations, the CBIAC will accept submissions on a first-come, first-served basis and reserves the right to reject submissions.

1998 MEETINGS

November 12

Support to the XXI Century Joint Warfighter

Sheraton Inn University

Orlando, FL

Contact(s):

International Test and Evaluation Association(ITEA)
& Association of the United States Army (AUSA)

AUSA/ITEA

Cyndi Burns

PO Box 660591

Chuluota, FL 32766

POC: Cyndi Burns

Tel: (407) 657-3434

E-mail: cburns@teksystems.com

<http://www.itea.org/events/index.htm>

November 16-19

Insensitive Munitions & Energetic Materials Technology Symposium "New Materials/New Solutions - Meeting The Needs Of Tomorrow's Battlefield Today."

San Diego Princess Resort

San Diego, CA

Contact(s):

National Defense Industrial Association (NDIA)

2111 Wilson Boulevard, Suite 400

Arlington, VA 22201-3061

Meeting Reference: #956

POC: Shari Levine

Tel: (703) 247-2582

E-mail: slevine@ndia.org

<http://www.ndia.org/events/brochure/956/956.htm>

November 17-20

Scientific Conference on Chemical and Biological Defense Research

Edgewood Area Conference Center

Aberdeen Proving Ground, Maryland

Contact(s)

Science and Technology Corporation (STC)

STC-Meetings Services International

101 Research Drive

Hampton, Virginia 23666-1340 USA

POC: Judy Cole

Tel: (757) 766-5855 Fax: (757) 865-8721

E-mail: cole@stcnet.com

ERDEC POC: Ms. Dottie Berg

Tel: (410) 671-4883/4144 or DSN 584-4883/4144

Fax: (410) 671-2649

E-mail: dxberg@cbdcom.apgea.army.mil

<http://www.stcnet.com/meetings/erdec98.html>

November 26 - 27

1st Congress for the Medical and Health Service Care of NBC Casualties

Athens, Greece

Sponsor:

The Medical Directorate of Hellenic Air Force's

General Staff (HAF/GS/MDIR)

Major Athanasios Konstantinou, MD

HAF-General Staff-Medical Directorate

Bureau for Operations - Planning-NBC Defense

Kanellopoulou St. 3- Holargos

Athens HELLAS

Fax: (GR)-1- 7781104

E-mail: likos@mail.hol.gr

<http://www.geocities.com/HotSprings/Spa/5025/ndb.htm>

November 30 - December 3

Interservice/Industry Training, Simulation and Education Conference (I/ITSEC'98)

Orange County Convention Center

Orlando, FL

Sponsor:

The National Training Systems Association (NTSA)

US Air Force, Training Systems Product Group

Wright Patterson AFB, OH

POC: CAPT Jim Hollenbach, USN

Defense Modeling & Simulation Office

1901 N. Beauregard Street, Suite 504

Alexandria, VA 22311

Tel: (703) 998-0660 Fax: (703) 998-0667

E-mail: jwh@msis.dmsomil

<http://www.iitsec.org/>

December 1-2

NLW '98

Non-Lethal Weapons

Copthorne Tara Hotel

London, England

Contact(s):

Jane's Information Group

1340 Braddock Place, Suite 300

Alexandria, VA 22314

POC: Marian Sullivan

Tel: (703) 683-3700 Fax: (703) 836-0118

E-mail : sullivan@janes.com

<http://conference.janes.com/>

December 1-3

The "Partners in Environmental Technology"

Technical Symposium and Workshop

The Hyatt Regency Crystal City

Arlington, VA.

Contact(s):

Strategic Environmental Research and Development
Program (SERDP)

SERDP Program Office

901 North Stuart Street, Suite 303

Arlington, VA 22203

POC: Ms. Amy Levine

Tel: (703) 696-2124 Fax: (703) 696-2114

E-mail: levineam@acq.osd.mil

<http://www.hgl.com/serdp/symposium/tsw.html>

December 1-4

Alternative Toxicological Methods for the 21st Century: Protecting Human Health and Advancing Animal Welfare

National Institutes of Health
Bethesda, Maryland

Sponsor: U.S. Army Soldier and Biological Chemical Command
National Institute of Environmental Health Sciences
U.S. Army Medical Research Institute of Chemical Defense

In Assoc. with: Association of Government Toxicologists
Chesapeake Chapter of Sigma Xi

Contact(s): Booz Allen & Hamilton, Inc.
ATTN: Dr. Max Klein
1309-R Continental Drive
Abingdon, MD 21009
Tel: (410) 612-8233 Fax: (410) 612-8251

December 2-4

First Singapore International Symposium on Protection Against Toxic Chemicals (SISPAT): Protection Against Toxic Chemicals in the Tropics

Goodwood Park Hotel

Singapore

Contact(s) Defense Science Organization (DSO)
DSO National Laboratories
20 Science Park Drive
Singapore 118230
POC: Mr. Lee Poh Keong
Tel : +65 772 8304 Fax : +65 872 6219
E-mail: sispat@dso.org.
<http://www.dso.gov.sg/sispat/symposium.html>

December 13-16

1998 Winter Simulation Conference

Grand Hyatt Hotel

Washington, D.C

Contact(s): AutoSimulations
1827 Powers Ferry Road
Building #17, Suite 100
Atlanta, GA 30339
POC: John S. Carson
Tel: (770) 955-1501 Fax: (770) 955-1592
E-mail: johnc@autosim.com
and
Consolidated Freightways
1717 21st Street
Portland, OR 97209
POC: Mani Manivannan
Tel: (503) 499-3550 Fax: (503) 499-3858
E-mail: mani@eniach.com
<http://www.wintersim.org/>

1999 Meetings

January 17 - 20

1999 Western MultiConference

Cathedral Hill Hotel

San Francisco, California

Sponsor: The Society for Computer Simulation International
PO Box 17900
San Diego, CA 92177-7900
POC: SCS
Tel: (619) 277-3888 Fax: (619) 277-3930
E-mail: wmc99@scs.org
<http://www.scs.org/conferenc/wmc99/wmc99cfp.html>

March 1-3

Chem-Bio APBI

Laurel, MD

Contact(s): National Defense Industrial Association (NDIA)
2111 Wilson Boulevard, Suite 400
Arlington, VA 22201-3061
Meeting Reference: #937
POC: Fred Jones
Tel: (703) 247-2544
E-mail: fjones@ndia.org
<http://www.ndia.org/events/master98-00.htm>

March 7-12

PITTCON® '99

Orange County Convention Center

Orlando, FL

Contact(s): The Pittsburgh Conference
300 Penn Center Blvd., Suite 332
Pittsburgh, PA 15235-5503
Tel: (412) 825-3220 or (800)825-3221
Fax: (412) 825-3224
E-mail: reg@pittcon.org
<http://www.pittcon.org/>

March 29 - April 1

Privatization/Outsourcing of DoD Environmental Operations: Who? What? When? Where? and Why?

Colorado Convention Center

Denver, CO

Sponsor: Environmental Systems Division, NDIA
With: Deputy Under Secretary of Defense, Environmental Security and Assistant Chief of Staff for Installations Management, Department of the Army
National Defense Industrial Association (NDIA)
2111 Wilson Boulevard, Suite 400
Arlington, VA 22201-3061
Meeting Reference #: 944
POC: Jean Kohlmeier
Tel: (703) 247-2574 Fax: (703) 522-1885
E-mail: jkohlmeier@ndia.org
<http://www.ndia.org/events/brochure/944/944.htm>

March 29 - April 02

18th Annual Course on Modeling, Simulation, and Gaming of Warfare

Paul Weber Space Science and Technology Building

Georgia Institute of Technology

Atlanta, GA USA 30332

Contact(s): POC: Mr. Terry Hilderbrand
Tel: (404) 894-9063 Fax: (404) 894-9081
E-mail: terry.hilderbrand@gttri.gatech.edu
<http://www.msosa.dmsi.mil/mscalendar/default.asp?fcfn=evedetails&itemid=201>

April 5 - Apr 9

13th International Symposium on Aerospace/Defense Sensing, Simulation, and Controls

Marriott World Center Resort and Convention Center

Orlando, FL

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<http://www.msosa.dmsi.mil/mscalendar/default.asp?fcfn=evedetails&itemid=541>

ONGOING AND RECENT ACTIVITIES

Current Awareness and Promotions

- The CBIAC was one of the co-sponsors and exhibitors at the **Federal Emergency Management Agency (FEMA) 1998 Technology Partnerships for Emergency Management Workshop and Exhibition**, hosted by Argonne National Laboratory in Argonne, Illinois, on July 20-23, 1998. The CBIAC exhibit included highlights of TAT efforts being performed in support of domestic preparedness programs. See **Meeting Highlights** on page 11 for details.
- The CBIAC attended and staffed a display at the **DTIC 1998 Annual Users Meeting and Training Conference**, Nov. 2-5, 1998, at the Doubletree Hotel at the National Airport in Arlington, Virginia. CBIAC informational products and services were featured at the conference.

Inquiry and Referral Services

Last quarter, twenty-two percent of the inquiries were requests for information related to NBC Survivability. Fourteen percent of the inquiries were for physical and chemical properties data.

Products

Check The CBIAC homepage at <http://www.cbiac.apgea.army.mil/> for links to the CB defense community. We are in the process of updating our CB Internet Directory. See page 10 for details.

Technical Area Tasks (TATs)

Since the last newsletter, 18 new tasks were awarded, effort was added to 47 ongoing tasks, and 6 have been completed. As of 30 September 1998, a total of 191 TATs have been awarded. Total value of TATs awarded is over 87 million dollars. The chart at the bottom of the page shows the percentage of TAT work sponsored by each branch of the armed forces for fourth quarter FY98, along with the funding (in millions) provided by each organization.

For further information on a CBIAC TAT, contact Judith Shetterly, CBIAC TAT Administrator. In order for us to help you most efficiently, please furnish you Government Contract Number (if any), the

reason you are requesting the information, and your organization's address and telephone number. This information is needed in order to obtain the release of information from the TAT sponsor.

Completed:

Task Description/Sponsor

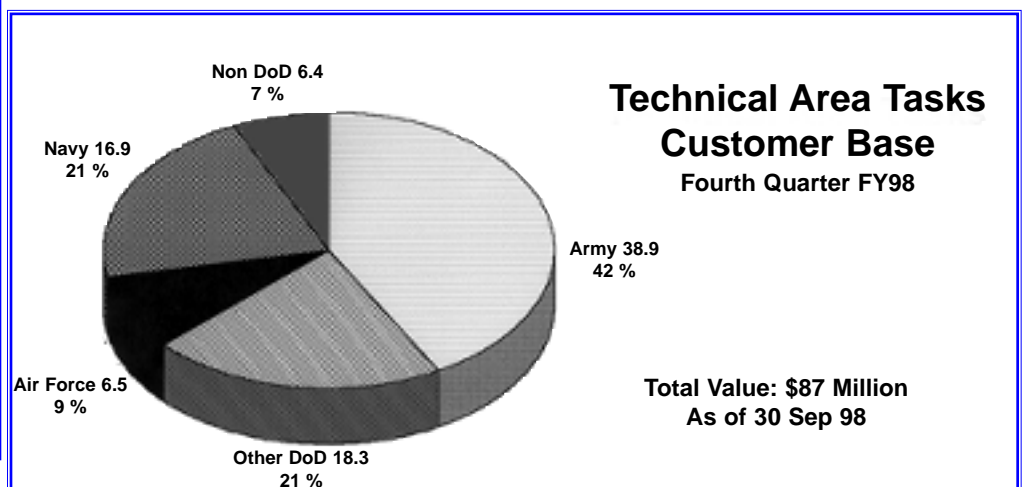
52	Analysis of Methods for Agent Detoxification	USA/ERDEC
70	Conduct and Evaluation on LVOSS Discharger Performance	USA/CBDCOM (SBCCOM)
80	Evaluation of Decontamination Process for Ground Crew Ensemble	USAF/HSC
106	Inhalation Toxicity Data	USA/ERDEC
128	Moldable Filter Media for RESPO21	USA/ERDEC
192	Guidance Document for CWM Contaminated HTRW Sites	USA/Corp of Engineers
244	Validation of CB Filter Performance Procedures	USA/ERDEC

Underway:

Task Description/Sponsor

324	Support to CBDCOM (SBCCOM) DP Training Program	USA/ERDEC
348	Technical Safety and Health Support to ERDEC Safety Office	USA/ERDEC
349	Media Development for HEPA Filters	USA/ERDEC

369	Enhancement to the First Generation JSGPM Filter Prototype	USA/ERDEC
370	1998 NATO Sponsored Decontamination Workshop	USA/CBDCOM (SBCCOM)
374	Scientific Support to the Neural Systems Lab of USMRICD	USA/MRICD
383	Technical Support to Domestic Preparedness BW-IRP	USA/ERDEC
384	Feasibility Study for the Application of a SCCO2 Extraction	USA/ERDEC
385	Panel Review/Workshop for Medical Battle Book	USA/CHPMM
389	Programmatic & Technical Support for Domestic Preparedness	USA/ERDEC
399	Chemical and Biological Anti-Terrorism Literature Search	USA/ERDEC
400	Chemical Agent Offgassing from RAH-66 Comanche Materials	USA/Comanche PMO
404	Migration of the USACMLS to Ft Leonard Wood, MO	USA/CMLS
405	Material Testing of CWO-66/P Coveralls	USAF/HSC/YAE
406	Technical Support for Chemical Analysis & Field Samplings	USA/Corps of Engineers
408	Assessment of the CAMIN	USA/CBDCOM (SBCCOM)



SELECTED INQUIRY RESPONSES

This section of the newsletter contains selections of recent technical inquiries and responses on subjects we feel are of interest to our readers. The information presented has been edited to conserve space. If you would like further detail, contact Mary Frances Tracy (tracymf@bat-telle.org) at 410-612-6417. Please provide the reference number if available.

Q: What are some new approaches to chemical disposal?

A: Several disposal technologies are described below:

A thermal treatment process for highly contaminated material called the *PLASMOX*[®] process. Thermal plasma has become an established method for treatment of toxic and radioactive wastes and for the recovery of metals from contaminated scrap. The process is carried out in 2 stages: a plasma high temperature pyrolysis stage where the high arc temperatures (up to 20,000°C) and the high energy densities of the plasma torch will permit an effective destruction of the waste materials followed by a subsequent oxidation of the pyrolysis gases in a post-combustion chamber where they are quickly oxidized with the addition of a n air/oxygen mixture and kept at temperatures above 1200°C for more than 2 seconds. This cleans the waste gas of harmful substances such as HCl, SO₂, NO_x, HF, NH₃, heavy metals, dioxins, furanes and dust.

For further information see Holger Weigel, Dr. Thomas Stock, and Dr. Wolfgang Hoffelner, *Disposal of Chemical Warfare Agents Residues and Munitions - A New Approach by Mannesmann Demag and MGC-Plasma*, **The ASA Newsletter**, Issue number 67, August 14, 1998, pages 18-22.

Laboratory Neutralization followed by Laboratory Biodegradation assessed for HD and VX disposal:

Chemical neutralization of CWAs is followed by aerobic biodegradation of the neutralized hydrolysate in sequencing batch reactors using activated sludge from water treatment facilities. This ultimately converts the organic by-products into CO₂, water and inorganics (sulfate, biomass).

For further discussion of this process see Novad, Joseph J.; Coale, Joanne N., *Edgewood RDE Center Support to the Alternative Technology Program, Final Report*, Sep 94-Nov 96, 16 pages.

Catalytic Extraction Process Technology. A reactor called a catalytic processing unit (CPU) contains a bath of molten metal, typically iron or nickel, and is usually operated in the temperature range of 1425°C to 1650°C. Feed material, which may be liquid, gas, finely divided entrained solids, or a pumpable slurry, is injected into the bath along with oxygen and methane. The molecular entities in the feed material are decomposed by catalysis into their component elements which dissolve and chemically bond with the metal forming intermediates. Residuals from treating VX, HD, ton containers, and dunnage are expected to be ferrous alloys, aqueous hydrochloric acid, elemental sulfur and a synthesis gas. The synthesis gas can be combusted in an on-site gas turbine generator, along with natural gas, to provide electricity used in the process.

This is discussed in great detail in a publication of the National Academy of Sciences, Washington D.C. called *Review And Evaluation Of Alternative Chemical Disposal Technologies*, published by the **National Academy Press**, Washington, D.C. 1996, 254 pages.

Electrochemical Oxidation. The core reactions take place in two electrochemical cells connected in parallel to a power supply. One cell contains AgNO₃ and HNO₃, and Agent while the other contains HNO₃. When power is applied, Ag (I) ions are oxidized at the anode to the highly reactive Ag (II). In the presence of organics, this leads to the formation of intermediates, such as hydroxyl radicals, which rapidly oxidize the organic species. Organic impurities in the agent will be oxidized in the anode compartment by reactions analogous to the reactions with agent. The process reactions involving agent are irreversible. Once agent is destroyed, it cannot reform.

Discussed in detail in a publication of the National Academy Of Sciences Washington, D.C. called *Review And Evaluation Of Alternative Chemical Disposal Technologies*, published by the **National Academy Press**, Washington, D.C. 1996, 254 pages.

Gas-Phase Chemical Reduction Technology. The process exposes chemicals first to hydrogen and steam at elevated temperatures (up to 850°C) and nominally atmospheric pressure and then to a gas scrubbing train to remove inorganic by-products to transform organic wastes into simpler substances that are either less toxic or convertible to less toxic materials. Chlorinated hydrocarbons are chemically broken down and reduced to methane (CH₄) and HCl; with CO and CO₂ as by-products. Nonchlorinated aromatic hydrocarbons are mainly reduced to methane with minor amounts of other light hydrocarbons. Carbon and presumably some heavier hydrocarbons are also produced. Discussed in greater detail in a publication of the National Academy Of Sciences Washington, D.C. called *Review And Evaluation Of Alternative Chemical Disposal Technologies*, published by the **National Academy Press**, Washington, D.C. 1996, 254 pages.

Related Web sites:

<http://www.environment.gov.au/portfolio/epg/envirnet/swtt/contents.html>
Environment Australia: *Appropriate Technologies for the Treatment of Scheduled Wastes: Technology Reviews* (Eco Logic, Molten Media Processes, Supercritical Water Oxidation and others)

See "Selected Inquiry Responses"

continued on page 11

CBIAC STATISTICS *Fourth Quarter, FY98*

Total CBIAC Documents accessible through DTIC/DROLS: 8,718

Shared¹: 4,975 Unique²: 3,743

Total Documents added to the CBIAC BD during Fourth Quarter, FY98: 404

Total Citations (without Documents) added to the CBIAC BD during Fourth Quarter, FY98: 288

Total Citations available through the CBIAC BD: 53,484

Total Documents on Site: 31,805

Total Inquiries received during Fourth Quarter, FY98: 130

Technical: 45 Bibliographic: 67
Informational: 15 Referral: 3

Total TATs awarded since contract initiation: 191
Completed: 74 Ongoing: 117

Total Newsletter Subscribers: 2,068

¹ Existing DTIC records appended with CBIAC terms
² New DTIC records created by the CBIAC

McIntyre, Jamie. *U.S.: Sudan plant sample contains VX nerve gas precursor*,

<http://www.cnn.com/WORLD/africa/9808/24/bomb.damage/>, 24 August 1998. A

senior U.S. intelligence official confirmed that a sample taken from the soil surrounding a Sudanese pharmaceutical factory has tested positive for a chemical that is "one step away" from the nerve gas VX.

EMPTA, a chemical ingredient, was found in the sample. EMPTA has no commercial use except in the production of nerve gas. An independent chemical weapons expert indicated that the presence of EMPTA is the "smoking gun" and provides proof of the involvement of the facility and the manufacture of nerve gas.

Toy planes could sniff out biological weapons,

<http://seek-p.infoseek.com/>

[Content...&sv=Is&lk=&col=NX&kt=A&ak=news1486](http://seek-p.infoseek.com/Content...&sv=Is&lk=&col=NX&kt=A&ak=news1486), 9 September 1998. Reuters

has obtained information from the "New Scientist," a British magazine, of the development by the U.S. of small radio-controlled planes capable of detecting the presence of biological agents, even minute quantities. The planes are designed to fly into dangerous areas at a low altitude to detect up to four types of bacteria. An on-board sampling chamber has been designed to allow air to pass through and thus creating a vortex in a pool of water. Every five minutes the water in the chamber washes over a sensor comprised of four optical fibers. The optical fibers have a probe affixed to the core of each fiber. Each of the probes is coated with an antibody for a particular bacterium allowing for the adhesion in water if present of the spore of the particular bacterium to the probe. The New Scientist stated Frances Ligler of Washington's Naval Research Laboratory and her team had tested a plane weighing 42 lbs (19 kg) and designed with a four meter wingspan using a harmless bacterium that they released in the air. Detection of the bacterium takes between 5 and 20 minutes, depending upon the temperature.

Weigel, Holger; Stock, Thomas, Dr.; Hoffelner, Wolfgang, Dr. *Disposal of Chemical Warfare Agents Residues and Munitions - A New Approach by Mannesmann Demag and MGC-Plasma*, **The ASA Newsletter**, 14 August 1998.

Since the end of World War II, many problems have arisen concerning old munitions, especially chemical munitions, and the disposal of these munitions. The questions that many countries face are what to do with the discovery of old munitions, former military facilities, testing grounds, production sites, and also, the contaminated soil surrounding any one of above mentioned areas. In lengthy detail, the ASA Newsletter article covers a new technology for the destruction of chemical weapons (CW) and contaminated soils. The process selected to handle materials contaminated with CW agents is a combination process consisting of 1) a thermal process for the highly contaminated material - the PLAS-MOX[®] - process and 2) a physical-chemical soil washing process. The PLAS-MOX[®] - process has a maximum capacity of 1 ton per hour and the physical-chemical process has a maximum of 2.5 tons of soil material per hour. The article provides a complete description of the processes. The concluding paragraphs describe the high-temperature plasma technology as a potent process for the treatment of problematic waste materials. The benefits of the PLAS-MOX[®] - process combined with soil cleansing are described as follows: 1) inertization of the residues, even with widely fluctuating charge materials; 2) a glass matrix reliably binds heavy metals; 3) possibility of charging a wide range of materials; 4) possibility of further use of the slag; 5) waste water is not produced in the self-sufficient plant; 6) plasma pyrolysis produces very low volume of waste gas; 7) no furanes or dioxins are produced; 8) decontamination of soils from problematical polluted sites; 9) filter dusts, highly contaminated sludge residues and floats are processed; 10) the potential to recycle the treated material as fill for former contaminated sites.

WEAPONS OF MASS DESTRUCTION RESPONSE TEAM LOCATIONS

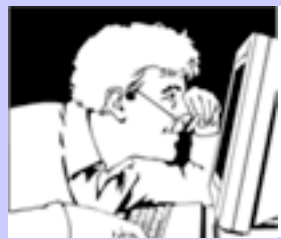
Secretary of the Defense William S. Cohen announced, along with 10 state governors, the specific locations of the 10 National Guard Rapid Assessment and Initial Detection, or RAID, teams being established during the next fiscal year. The teams are part of the Department of Defense's overall efforts to support local, state and federal civil authorities in the event on an incident involving weapons of mass destruction, or WMD, on U.S. soil. Following the state selection announced on May 22, 1998, each state developed and submitted recommendations to Secretary of the Army Louis Caldera for the specific location of the teams within the state. Caldera has approved these locations for these new 22-member full-time National Guard teams: They are: Los Alamitos, CA; Aurora, CO; Marietta, GA - Dobbins Air Reserve Base; Peoria, IL; Natick, MA; Fort Leonard Wood, MO; Scotia, NY - Stratton Air National Guard Base; Fort Indiantown Gap, PA; Austin, TX; and Tacoma, WA.

Stationing decisions were made based upon criteria established by the Department of the Army and provided to the states. Criteria were designed to make the most of existing facilities and to ensure maximum coverage of the large metropolitan areas in each of the 10 Federal Emergency Management Agency regions.

The RAID Teams will assist emergency first responders. Upon request, they can be sent by the state or the federal government to respond to a suspected or actual WMD attack, assess the situation, advise the local incident commander and speed the flow of requested Department of Defense people, equipment and services to aid in relieving the effects of such an event. The National Guard RAID teams form the "tip of the military spear" in responding to domestic WMD use.

During Fiscal Year 1999, Guardsmen and women selected for the RAID teams will undergo rigorous training to increase the support they can provide to local emergency first responders. Following 15 months of individual and unit training, the teams will be evaluated for operational certification.

*Office of the Assistant Secretary of Defense
(Public Affairs) Washington, D.C. 20301
News Release No. 512-98, October 1, 1998*



The CBIAC's CB Internet Directory. . .

is continuously evolving to serve the CB defense community. If you know of a web site that will benefit the CB community, and you don't see it in the directory on our web site (<http://www.cbiac.apgea.army.mil/>), please send us the site name and URL.

(email: kingj@battelle.org, facsimile: (410) 676-9703, attn: Jim King)

MEETING HIGHLIGHTS

The CBIAC was one of the co-sponsors and exhibitors at the **Federal Emergency Management Agency (FEMA) 1998 Technology Partnerships for Emergency Management Workshop and Exhibition**, hosted by Argonne National Laboratory in Argonne, Illinois, on July 20-23, 1998. The CBIAC exhibit included highlights of TAT efforts being performed in support of domestic preparedness programs.

The event attracted approximately 400 participants, including fire and emergency management personnel, who were apprised of new and existing technologies and equipment that could be utilized in disaster preparedness programs. Co-sponsors and exhibitors conducted interactive sessions with representatives of the emergency management and fire fighting communities to solicit feedback on currently available products and services, as well as obtain suggestions for product improvement, and ideas for new products and services.

In addition to natural disasters, the workshop emphasized domestic preparedness plans and programs for responding to incidents of terrorism that may or may not involve weapons of mass destruction. Chemical, biological and nuclear incidents were addressed during the proceedings and visiting members of the fire and rescue community expressed concern and interesting ways to improve response to these types of incidents and ultimately reduce the loss of life.

Among the speakers who focused on terrorism and weapons of mass destruction were private consultants on counterterrorism, representatives of the FBI, and the Department of Defense, the Energy Department, and the Governments of Canada and Russia.

Next year, FEMA will be holding the workshop on May 17-20, 1999, in Gatlinburg, Tennessee. It will be hosted by the Oak Ridge National Laboratory.

Selected Inquiry Responses

Continued from page 9

<http://www.rec.hu/poland/wpa/net-hzw.htm#hzwtech>

Contains many links including the following under Hazardous Waste Treatment Technologies:

- Appropriate Technologies for the Destruction of Stockpiles of Persistent Organic Pollutants (POPs) and Related Materials by Pat Costner, Greenpeace.
- Description of bioremediation process, and documents of the US EPA Office of Research and Development (ORD)
- Cleanup Information Bulletin Board System (CLU-IN) offers access to documents and databases on innovative hazardous waste treatment technologies
- Mediated Electrochemical Oxidation, another description.
- Report of the NATO Advanced Research Workshop on the Destruction of Military Toxic Waste
- Supercritical Water Oxidation Central Resource Page of the Massachusetts Institute of Technology.

Q: Do the principal toxin agents have any non-military uses? I'm especially interested in botulinum toxin, trichothecene ("Yellow Rain") toxins and ricin?

A: A search of the open literature shows that botulinum toxin, like a number of other neurotoxins, has many medical applications in the treatment of spasmodic muscle disorders. In fact, there are so many medicinal uses of "botox" that a new medical journal entirely devoted to therapeutic uses of this toxin will be published.

The web site of The Journal of Therapeutic Botulinum Toxin: Basic and Clinical Sciences is located at

<http://www.bu.edu/cohis/npharm/npharm.html>

Various trichothecene toxin derivatives, ricin itself and ricin derivatives are used in a number of cancer therapies.

Useful internet search engines for providing references to beneficial uses of trichothecene toxins, ricin and other toxin agents are found at the web sites of the U.S. Patent and Trademark Office (<http://patents.uspto.gov/>) and PubMed located at

<http://www.ncbi.nlm.nih.gov/PubMed/>.



The **CBIAC Newsletter** is a quarterly publication of the Chemical Warfare/Chemical and Biological Defense Information Analysis Center (CBIAC). The CBIAC is a Department of Defense (DoD) Information Analysis Center (IAC), administratively managed by the Defense Technical Information Center (DTIC) under the DoDIAC Program Office.

Government agencies and private industry under contract to the Department of Defense can contact the CBIAC for informational products and services. The CBIAC serves as the center for the acquisition, compilation, analysis and dissemination of information relevant to chemical warfare and chemical and biological defense technology.

The CBIAC is located in Building E3330, Aberdeen Proving Ground - Edgewood Area, Maryland 21010. For further assistance or information, visit or contact the CBIAC Monday through Friday from 8:00 a.m. to 4:00 p.m., EST:

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APG, MD 21010-0196

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